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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,081	07/10/2001	Richard E. Demaray	M-11522 US	1225

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EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,081

Applicant(s)

DEMARAY ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-20, 24-27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-20, 24-27 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-17, and 24-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the new limitation that the core layer deposit remains on a sidewall portion of the ridge structure. First it is noted that Applicant failed to point out support for this new limitation. Second, Examiner could not find support for this limitation. Third, as per [0042] of the specification, any material on the sidewall would be more accurately described as cladding material. Lastly, the material on the wall is clearly below the core - it is not a part of the core layer – thus it cannot be a “core layer deposit”.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 14-17, and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite due to the new limitation of claim 14 that the core layer deposit remains on a sidewall portion of the ridge structure. It is noted that there is no description in the specification or in the arguments as to what such does or does not cover.

As indicated in the above 112 – 1st rejection, [0042] teaches that material similar to the cladding material that is deposited when the core deposition occurs. One of ordinary skill has no way to know whether such material is “core layer deposit”. Most importantly, one of ordinary skill would not be able to ascertain which of the embodiments of figure 4A-B and 6 would read on the claimed structure. For figure 4B: material 20B is not “on” top of the side wall. Figure 4A – the material is only up the wall a height of 2T – which would seem to be “on” the wall. It is unclear if the height was only T (such as with figure 6) if this would be “on” the wall.

Since one can not determine which embodiments would (and which would not) infringe on the present claims, the claims are not sufficiently definite.

See Allen Eng'g Corp. V. Bartell Indus. Inc. 299 F.3d 1336, 1348, 63 USPQ2d 1769, 1775 (Fed. Cir. 2002) (quoting Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 705, 48 USPQ2d 1880, 1888 (Fed. Cir. 1998)) (“In determining whether the claim is sufficiently definite, we must analyze whether “one skilled in the art would understand the bounds of the claim when read in light of the specification.”) See also, Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001) (citation omitted) (patent claims must be “sufficiently precise to permit a potential competitor to determine whether or not he is infringing”).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Nourshargh 4619680.

Figure 2(b) of Nourshargh discloses the step of “forming a ridge structure...”

Figure 2(c) represents the depositing a core layer. Figure 2(d) represents the step of depositing an upper cladding layer (15). The refractive index limitations are disclosed at col. 2, lines 20-28. It is clear that the core is not separately pattern because the second layer is “immediately deposited”. There would be no opportunity for patterning or anything else if the layer was immediately deposited. As to the new limitation that the core layer deposit is on a sidewall portion: It is deemed that (A) the ridge is the same thing as a sidewall (or else the side wall is part of the ridge) and thus the core deposit is on the sidewall; and/or (B) that since figure 2c of Nourshargh shows that layer 14 is over half-way up the sidewall and since Applicant’s figure 4A reasonably suggests that the glass need not be even half-way up the sidewall to be “on” the wall; and/or (C) Applicant’s

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figures 4A and 6 reasonably suggests that the glass needs to only abut the wall to be "on" the wall, which signifies a broad interpretation (such as 'the garden is on the south side of the house') and/or the Nourshargh core is on a "sidewall portion", specifically a *lower* portion of the sidewall.

The rest of the limitations are clearly met.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 15-17, 24-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi 6605228 in view of Klein 3850604 and Nourshargh 4619680.

Kawaguchi and Klein are combined as indicated in the prior Office action. The only differences are newly added limitations which exclude separate patterning, and which require a core layer deposit remains on the ridge portion.

Nourshargh discloses that there are two modes of forming core in cladding structures in planar optical waveguides. See col. 1, lines 38-50 and figures 2 and 3 of Nourshargh which discloses "removal of the rest of the first layer is not required", and that "the second layer of glass can be immediately deposited". It would have one been obvious to form the Kawaguchi waveguide by using the Nourshargh mode of figure 2, so that one can immediately form the second layer over the first layer.

It is noted that Nourshargh figure 2 has the sequence: A) forming the pattern, B) forming core layer, C) forming overclad layer. But the figure 3 mode has the step in a different order, namely B, A, C.

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From MPEP 2144.04

C. Changes in Sequence of Adding Ingredients

Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

See the prior Office Action for the manner in which the rest of the claim limitations are met.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi in view of Klein 3850604, Nourshargh and Kestigian 4915810.

See above and the prior Office Action for the manner in which the all the claim limitations are met.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi 6605228 in view of Klein 3850604 and Nourshargh 4619680 and Makikawa 6615614.

Kawaguchi, Klein and Nourshargh are applied as above, but do not disclose the claimed manner of making the ridge structure. Makikawa discloses that rather than etching a deposited glass layer to make depressions, one can etch silicon and then thermally oxidize the silicon and this results in non-deformed substrate, thinning of the glass layer due to etching, and results in pure quartz layer that minimizes insertion loss,

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and avoids industrially inadequate measures need countermeasure various deficiencies in the glass-etch method. See col. 1, lines 49-51, 55-60, col. 1, line 67 to col. 2, line 6; col. 2, lines 37-38. It would have been obvious to form the Kawaguchi - Klein – Nourshargh undercladding by thermally oxidizing an etch silicon substrate – as disclosed by Makikawa for one or more of the advantages that Makikawa discloses.

Response to Arguments

Applicant's arguments filed 6/17/05 have been fully considered but they are not persuasive..

It is argued Nourshargh does not have a core layer deposit on the ridge portion. See the rejections above which point out how Nourshargh reads on the claim language (as interpreted in light of the present disclosure).

It is further argued (starting page 11 of the response) that Kawaguchi extols the benefits of separate patterning of the core layer to prevent voids – and thus teaches away from using the Nourshargh mode of figure 2. Examiner is not convinced. Kawaguchi is directed to eliminating voids, not preventing voids. See Kawaguchi's Abstract, as well as figures 3, 6, 7, 8, 9, 11, 12 which shows void creation and elimination. Examiner could find no mention of a single embodiment of Kawaguchi which is directed to avoiding voids in the first place.

Claim 29 it is argued that the references do not teach applying the different powers. It is clear that such is inherently met: the target and the ridge structure are

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separated from each other and thus the power applied to one would not be applied to the other – they would have to be different. Additionally, the power that is applied to the target would be approximately equal to the sum of the power of the ridge plus the power of the planar portions between the ridges. And since the planar portions would have a non-zero amount, the two applied powers of the claim would have to be non-equal. As a hypothetical example: A power of 500 watts is applied across the chamber – the target had all 500 watts – the ridge structures would have 200 watts and the planar portion the rest, i.e. 300 watts.)

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus it does not matter that Kestigian does teach making waveguides or layers – there is no requirement that Kestigian does.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

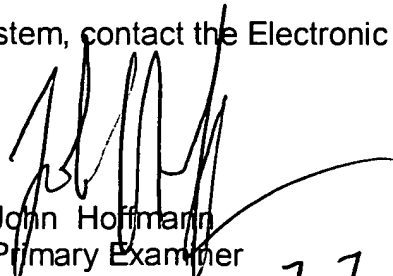
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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Hoffmann
Primary Examiner
Art Unit 1731

7-7-05

jmh